

# CURRENT LINE

DAR STATEWIDE PROJECT INFORMATION NEWSLETTER

VOLUME 2, NUMBER 4, November 1998

## OCEAN STATE INITIATIVE UPDATE

### NEW BOTTOMFISH MANAGEMENT RULES FOR MAIN HAWAIIAN ISLANDS



The Department of Land and Natural Resources (DLNR) established a new Administrative Rule Chapter 13-94 for managing bottomfish in the Main Hawaiian Islands. The rule went into effect June 1, 1998. This project was funded in part by the Governor's Ocean State Initiative. Federal fishery scientists, using data collected from Hawai'i commercial catch reports and sampling at the auction, showed that onaga and ehu have been overfished for many years in the Main Hawaiian Islands. Long-time fishermen agreed that the abundance and average sizes of onaga & ehu have been going down, especially in the last ten to fifteen years. The concern about onaga & ehu was shared by scientists & fishermen and resulted in DLNR taking action to manage the fishery.

The rule resulted from proposals developed in consultation with a Bottomfishermen's Task Force and input from public meetings with fishermen held statewide over a two-year period. The rule aims to conserve onaga and ehu, and other deep-water bottomfish species, so that these fish can continue to be viable resources. It requires sacrifices on the part of bottomfishermen today with hopes that there will be a sustainable bottomfish fishery in the future.

It will take time to restore the populations that have been depleted over many years. The DLNR needs everyone's help to make the new management regula-

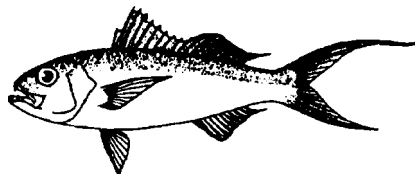
tions work. We are counting on your cooperation and support.

A brochure/map and the Bottomfish Vessel Registration form are available at most fishing supply stores, State boating offices, and all Division of Aquatic Resources's offices. Bottomfish species covered by these rules are: onaga, 'ehu, kalekale, opakapaka, gindai, hapu'upu'u, and lehi. The brochure includes information on Gear Restrictions, Non-commercial bag limits, Bottomfish restricted fishing areas, and Bottomfish fishing vessel identification numbers.

Complete copies of these rules, area closure maps, and vessel registration forms are available at Division of Aquatic Resources offices statewide - Oahu: 587-0100; Hawai'i: 974-6291; Kaua'i: 274-3344; Maui: 243-5294; Moloka'i: 567-6696. For full details of the Administrative Rule, please obtain a copy of the rule from the Division of Aquatic Resources. If you have any further questions, please contact Walter Ikehara at 587-0096 (voice) or 587-0115 (FAX).

You can also write to:

Division of Aquatic Resources  
1151 Punchbowl St., Rm. 330  
Honolulu, HI 96813  
or email: walteri@pixi.com



### Hawai'i Bottomfish Fishing Rules

Revised/Amended by April 25-98

Bottomfish species covered by these rules are: Onaga (Hawai'i), Ehu (Hawai'i), Kalekale (Hawai'i), Opakapaka (Hawai'i), Gindai (Hawai'i), Hapu'upu'u (Hawai'i), Lehi (Hawai'i), and others.

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## LICENSES, RULES, & REGULATIONS

### WAHIAWA RESERVOIR - BASS AND TUCUNARE FOR CATCH AND RELEASE FISHING ONLY!



The Department of Land and Natural Resources (DLNR) established an Amendment to Administrative Rule Chapter 13-62 to establish a new catch and release program for bass and tucunare in Wahiawa Reservoir. The rule went into effect July 1, 1998.

This amendment resulted from concerns by fishermen and the Wahiawa community that there has been a noticeable decline in the tucunare and bass populations in Lake Wilson. The intent of establishing a catch and release program for these fish is to increase the chances for remaining populations to reproduce and increase their numbers. The amendment to Administrative Rule Chapter 13-62 for the catch and release program is as follows:

#### **13-62-8 Catch and Release Program**

•There is established a catch and release program for the conservation of aquatic resources within the Wahiawa Public Fishing Area. It is unlawful for any person within the Wahiawa Public Fishing Area to keep, retain,

## INDEX

New Bottomfish Rules.....	1
New Wahiawa PFA Rules .....	1
1998 Trout Opening .....	2
Fish Feeding in Hanauma Bay .....	2
FAD Update .....	3
Fish Facts - Kumu .....	4

hold, or kill any tucunare, largemouth bass, or smallmouth bass.

• Any person either bringing to shore or bringing on board a vessel any tucunare, largemouth bass, or smallmouth bass taken from the waters of Wahiawa Public Fishing Area must return these fish immediately to the waters of the Wahiawa Public Fishing Area.

#### CLARIFICATION:

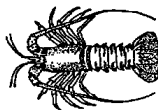


It has been brought to our attention that there may be some confusion as to when akule and/or halalu may be harvested with nets.

- It is **unlawful to take akule measuring under 8-1/2 inches in total length with net during July through October**. Any akule under 8-1/2 inches in total length is considered a halalu or juvenile akule.
- **From November to June halalu** (juvenile akule measuring under 8-1/2 inches in total length) **may be taken with nets that have a minimum mesh size of 1-1/2 inches**.
- **Akule that measure 8-1/2 inches in total length or more may be taken all year round with nets that have a minimum mesh size of 1-1/2 inches**.

#### REMINDERS:

##### Spiny Lobster Season Slipper Lobster Season & Kona Crab Season



is now **open** as of September 1st and will run till April 31st. Remember that minimum size for home consumption or sale is as follows:

	<i>Home Consumption</i>	<i>Commercial Sale</i>
Spiny Lobsters	3-1/4 inches carapace length	3-1/4 inches carapace length
Slipper Lobsters	2-3/4 inches tail width	2-3/4 inches tail width
Kona Crab	no restriction	4 inches long or wide

Other restrictions include no spearing, no taking with eggs, animals must be taken whole only and cannot be taken mutilated.

#### Moi & Moi-li'i Season



is now **open** as of September 1st and will run till May 31st. Remember that minimum size for home consumption or sale is 7 inches.

**Mullet Season** (for 'ama'ama or striped mullet) is **closed** between December to February. Open Season will resume on March 1st and run till November 30th.

**Waikiki Diamond Head Fishery Management Area** will be **closed** to fishing from January 1, 1999 to December 31, 1999. The area will be open to fishing from January 1, 2000 to December 31, 2000.

## FRESHWATER FISHING

### 1998 TROUT OPENING

Here are the totals for the last trout opening:



	1996 <i>Opening</i>	1997 <i>Opening</i>	1998 <i>Opening</i>
# of anglers	2,911	2,761	2956
# of fish	7,666	10,151	9,294

## NEARSHORE PROJECTS

### FISH FEEDING IN HANAUMA BAY



Fishermen have always known that feeding fish or "chumming" an area with food or bait will always attract fish into the area. As the fish are feeding, this causes a frenzy among them making it easier to catch them with a baited hook. This is the basic idea behind the familiar "palu bag" that is filled with tidbits of shrimp, fish, and other desirable pieces of fish food. This concept has expanded to include fish feeding in areas like Hanauma Bay to attract fish for many divers and snorkelers to interact with and observe. This obviously enhances the diving experience for the diver and as a result, fish feeding has become popular around the world as part of many dive operations.

When fishermen chum for fish, they do it

at a minimal, using just enough food or bait to gather the fish into an area so they can catch them. After the fish are caught or the fish are no longer biting the hook, the feeding or chumming stops. This type of feeding is temporary and does not impact the environment and ecology of the reef much. A fish's life is defined mainly by two events, feeding and reproducing. When we alter one of these two main events, it's hard to imagine that the change would be inconsequential.

While it's probably safe to assume that the entire diet of a fish does not consist of handouts, some of the handouts would seem to be unhealthy even in small quantities. Foods as diverse as hot dogs, peas, and processed canned cheese have been offered to fish. There is some debate as to the actual effects of such foods, but several sources suggest that fats which are solid at sea temperature (such as saturated animal fats) are detrimental to the health of fishes; marine organisms have liquid unsaturated fats in their bodies. Fish are not able to handle these hard saturated fats. These solid fats are packed into the organs of the fish's body causing serious consequences to its health.

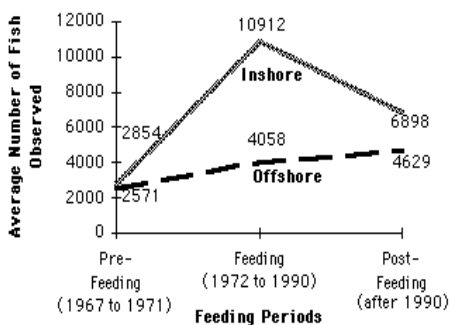
In addition to diet alteration, the behavior of fish can be affected. If fed regularly, fish become used to people in the water, thus becoming easy targets; a fish won't discriminate between a diver out taking pictures and one who will spear him for dinner. Also, if more aggressive, opportunistic feeders move into an area as a result of feeding, resident species are forced to compete for the same reef resources. Some fish will have to be displaced, as a reef can only sustain a finite amount of life. If, for example, a carnivore replaces an herbivore, more fish and less plants will be eaten, possibly throwing off the balance of the entire reef. Removing herbivores may even allow too much algae to grow, outcompeting the corals, and essentially killing the reef itself. While some may argue that these are over-exaggerations or worst-case scenarios, they are plausible results and should be taken into consideration before one decides to feed fish. In the case of Hanauma Bay, you have a situation here where there is heavy visitor traffic (human impact) and the fish are constantly fed everyday. Back in the early 1970's, it was estimated that about

200,000 people visited Hanauma Bay each year. Toward the late 1980's visitor counts reached up to 3.7 million people per year! Over time, this is bound to have some effect in the area. In addition, since the fish are not harvested in Hanauma Bay, they become very bold and will not hesitate to nip at fingers and ears regardless of whether a diver has food to give or not.

In the fall of 1967, Hanauma Bay was designated as Hawai'i's first Marine Life Conservation District (MLCD) to provide complete protection for all aquatic organisms and geological features within the bay. In a study done prior to closing the bay off for fishing, it was determined that over 95% of those that visited Hanauma Bay were not there to fish. Fishermen made up less than 5% of the people who frequented Hanauma Bay. Fish that were landed by these fishermen include mullet, uhu (parrotfish), menpachi, 'ala'ih, goatfishes (weke, moana, etc.), surgeonfish (manini, pualu, etc.), and wrasses (hinalea, etc.). Two tako and a turtle were also included as part of the landings observed during the study. The types of fish caught are similar to what can be seen in Hanauma Bay today.

After closing the bay to fishing, the numbers of fish began to increase, as was expected. When people began to feed the fish in Hanauma Bay around 1972, the number of fish increased even more dramatically. In some cases, the average increased as much as 760%!

Surveys done by DAR show feeding activities appear to be influencing some movements in fish populations within the bay. The following is a historical account of what DAR has observed since Hanauma Bay became an MLCD:



#### ***Pre-Feeding period (1967 to 1972)***

- Overall, fish populations increased with the establishment of the MLCD and the resulting removal of fishing pressure.

#### ***Feeding period (1972 to 1990)***

- All species of fish increased in size and numbers except for the wrasses (hinalea), goatfish (weke), and ladyfish ('awa'awa) which had little or no change in numbers.

- Feeding has also attracted large numbers of fish that weren't found there before in such high abundance such as the nenu, aholehole, and uouoa (false mullet).

#### ***Post-Feeding period (after 1990)***

- The most heavily impacted area is the side of the bay where the area known as the "keyhole" is located. Almost all groups of fishes went down in numbers except for the damselfishes (mamo, kupipi, etc.) which continued to increase.

- Hinalea numbers seemed to remain the same in all locations of the bay except for the keyhole area where their numbers decreased.

- Numbers of weke also seemed to decrease in the inshore areas.

- For parrotfish (uhu) and surgeonfish (pualu, palani, manini, etc.), the numbers decreased inshore, but at the same time have increased offshore.

Overall, DAR has observed some changes in the fish populations in Hanauma Bay since the County rule changes took effect in 1990. However, monitoring needs to be continued to get a better picture of what is happening to the fish in the bay over time. A total ban on fish feeding in Hanauma Bay is expected to take effect by the summer of 1999. It will be interesting to see how this will affect fish populations when it takes place. Whether the fish populations will remain the same or change will depend on several factors:

- 1) How much fish can the reef provide food for without the supplemental fish feeding?

- 2) If the reef cannot provide enough food to maintain present fish populations, how long will it take for the reef to recover enough to provide food sources for the fish?

Heavy visitor traffic and a total ban on fish feeding will definitely influence what the fish population will be within Hanauma Bay in the future.

As a whole, one of the benefits of having an MLCD is to provide a sanctuary where fish species such as those that are important for the food and sport fishing industries are allowed to grow and reproduce, providing seed stock for areas outside the MLCD. Hopefully, Hanauma Bay will continue to function in this capacity whether the fish are fed supplementally or not.

## **OFFSHORE PROJECTS**

### ***FAD PROJECT***

Here is the most recent update of missing FADs:

#### ***MISSING FADs (as of Sept. 4, 1998):***

<b>FAD</b>	<b>Location</b>	<b>Island</b>
A	South Pt.	Hawai'i
C	Loa Pt.	Hawai'i
SS	Apua Pt.	Hawai'i
VV	Kahalu'u	Hawai'i
KH	Kahena	Hawai'i
NL	Nu'u Landing	Maui
O	Kalaupapa	Moloka'i
KK	Waimea	Kaua'i
Z	Kipukai	Kaua'i
AA	Port Allen	Kaua'i
BB	Moloka'a	Kaua'i
EK	Hanalei	Kaua'i
U	Kane'ohe	O'ahu
CO	Ka'ena Pt.	O'ahu

For current locations and/or more information, contact Warren Cortez at 848-2939. Also, if you know of any FADs that broke loose, see any light out or have any other comments, please give Warren a call.

## FISH FACTS



*Parupeneus porphyreus*  
(White-Saddle Goatfish, Kumu)

### SIZES

**Length:** large specimens can reach up to lengths of 23 inches, but most are much smaller.

**Weight:**

### BREEDING

**Sexual Maturity:** fish start to spawn at a fork length of 9.4 inches, which is about 1.25 years in age.

**Spawning:** spawning occurs from November to August with peaks around December through July.

### LIFESTYLE

**Distribution:** Hawai'i southward to central Polynesia.

**Habitat:** Inhabits nearshore reef areas from the shoreline to known depths of 95 feet.

**Diet:** Primarily feeds during the dusk and dawn periods on small crustaceans such as crabs, crab megalops, alpheid shrimp, etc. Larger kumu over 7 inches in length include fish as part of their diet.

**Life Span:** Maximum recorded age is 6 years.

### RELATED SPECIES

The kumu is a member of the Goatfish Family which includes other species such as moana, malu, weke 'ula, moana kea, and all the other weke species. Goatfish are unique in that they possess a pair of barbels on the chin that are used most importantly for finding and recognizing food buried in the sand. Almost any fisherman or diver has observed at least once, a weke probing the sand with their barbels looking for food. All are considered desirable food fishes, supporting valuable commercial and sport fisheries in Hawai'i. Commercial landings for kumu in 1996 was 5,284 pounds for the state. The average wholesale value of those pounds sold is about \$5.85 per pound. Average size sold is about 1.3 pounds.

The following table will give you an idea of how fast these fish grow and how old they are. Please note that these are just ballpark figures and meant only to give you a general idea on the relationship of length, weight, and age.

<i>Length, Weight and Age of Kumu</i>		
Fork Length (inches)	Weight (pounds)	Age (years)
2	0.01	-
6	0.2	0.5
8	0.4	1
12	1.3	-
13	1.7	2
14	2.1	-
16	3.2	3
17	3.8	4
18	4.6	5
19	5.4	6
22	8.5	-

The Department of Land and Natural Resources receives financial support under the Federal Aid in Sport Fish Restoration and other federal programs. Under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and the laws of the State of Hawaii, the U.S. Department of the Interior and the State of Hawaii prohibit discrimination on the basis of race, color, religion, sex, national origin, age, and disability. If you believe that you have been discriminated against in any program, activity or facility, or if you desire information, please write to: Affirmative Action Officer, Personnel Office, Department of Land and Natural Resources, 1151 Punchbowl Street, Rm. 231, Honolulu, HI 96813, or the U.S. Fish & Wildlife Service, Office for Human Resources, 1849 C Street NW, Room 3058, Washington, D. C. 20240.